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10/578,555	03/05/2007	Ole Koudal	BORS3002	5058
23364 7590 05/24/2010 BACON & THOMAS, PLLC 625 SLATERS LANE FOURTH FLOOR ALEXANDRIA, VA 22314-1176				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/578,555

**Applicant(s)**

KOUDAL ET AL.

**Examiner**

AMINE BENLAGSIR

**Art Unit**

2612

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 March 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 18-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 18-34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 March 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/GS/IB)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_
- Paper No(s)/Mail Date 08/13/2009, 01/06/2009 and 05/08/2006

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 25-28, 30-32, and 34 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claims 25, 26, 28, and 30-32, the applicant is claiming "flow velocity", no disclosure and support are found of this limitation in the specification.

The same applies for claims 27 and 34 for their dependencies.

Regarding claims 25, 26, 28, and 30-32, the applicant is claiming "medium", no disclosure and support are found of this limitation in the specification.

The same applies for claims 27 and 34 for their dependencies.

Regarding claim 34 line 3, the applicant is claiming "a Coriolis flow measuring device", and no disclosure and support of this limitation is found in the specification.

Regarding claim 34 line 3, the applicant is claiming "an ultrasonic flow measuring device", and no disclosure and support of this limitation are found in the specification.

Regarding claim 34 lines 2-3, the applicant is claiming "a magneto-inductively or a thermally working flow measuring device", and no disclosure and support are found of this limitation in the specification.

Regarding claim 34 lines 2-3, the applicant is claiming "a thermally working flow measuring device", and no disclosure and support are found of this limitation in the specification.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 19 and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 19 is vague and indefinite because it recites a Trademark name "HART-standard" in line 2. Therefore, it is not clear in the limitation of the claim because HART-standard is not a clear definition and it is subject to change anytime.

Claim 21 is vague and indefinite because it recites a Trademark name "HART-burst mode" in line 2. Therefore, it is not clear in the limitation of the claim because HART-burst mode is not a clear definition and it is subject to change anytime.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 18-20, 22-23 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over ***Langels et al. (US6473656B1)*** in view of ***Krivoshein (US6449715B1)***.

As per claim 18, Langels et al. discloses a method for transmitting measured values between two measurement transmitters (***Langels et al. fig 1:8-14, col 2 In 22-32***), to a control system (***Langels et al. fig 1:1***), which serves as master, comprising the steps of:

transmitting digital signals between the two measurement transmitters (***Langels et al. fig 2, col 3 In 58-65***) via an additional communication connection (***Langels et al. fig 2:46, col 3 In 58-65***); and examining, using the receiver measurement transmitter, incoming digital signals (***Langels et al. fig 2:40, wherein technology module 40 is equivalent to module 8***) for at least one characteristic value (***Langels et al. col 3 In 1-16: wherein characteristic values are interpreted as "setpoint" from technology module 9 or "sensor value" from technology module 11***) of the transmitting measurement transmitter (***Langels et al. fig 1:9,11***), in order to find measured values needed for evaluation (***Langels et al. col 3 In 37-43***) in the receiver measurement transmitter (***Langels et al. fig 2:40, technology module 8 is equivalent to module 40***).

Langels et al. does not disclose two measurement transmitters which transmit, via two communication connections, digital signals according to the master/slave principle and analog signals.

Krivoshein discloses two measurement transmitters which transmit, via two communication connections, digital signals according to the master/slave principle and analog signals (***Krivoshein fig 1, col 8 In 10-20: wherein the “HART device protocol” describes the same advantages regarding this feature as the present application).***

Therefore, it would have been obvious to acknowledge the inclusion of the Hart protocol feature, known as a standard measure used to establish communication links by transmitting digital signals according to the master/slave principle, in addition to analog signals, of Krivoshein in the Langels et al. method for transmitting measured values between two measurement transmitters.

The motivation would to provide a protocol that generally provides analog signals indicative of process parameters and digital signals indicative of other device information on each of the lines between the master device and slave devices (Krivoshein col 8 In 15-17).

**As per claim 19**, Langels et al. in view of Krivoshein discloses the method wherein:

communication between the measurement transmitters (***Langels et al. fig 1:9,11***) and the control system (***Langels et al. fig 1:1***) occurs according to the HART®-standard (***Krivoshein fig 1:32, col 8 In 10-20***).

**As per claim 20**, Langels et al. in view of Krivoshein discloses the method wherein:

the receiver measurement transmitter evaluates the units characterizing number associated with a given numerical value (**Langels et al. col 3 In 1-16**); and

the meaning of the units characterizing number is established in the HART®-standard (**Krivoshein col 11 In 5-20 & col 15 In 51-58**).

**As per claim 22**, Langels et al. in view of Krivoshein discloses the method wherein:

the receiver measurement transmitter is operated in master mode (**Langels et al. fig 1:1 & 8, col 3 In 1-16: wherein the module 8 reads out the measured values of the transmitting measurement transmitters such as setpoint values from module 9 and sensor values from module 11**) and reads the measured values out of the transmitting measurement transmitter (**Langels et al. col 3 In 1-16**).

**As per claim 23**, Langels et al. in view of Krivoshein discloses the method wherein:

the receiver measurement transmitter (**Langels et al. fig 1:8, technology module 8 is equivalent to module 40**) and the transmitting measurement transmitter (**Langels et al. fig 1:9,11**) register different measured variables (**Langels et al. col 3 In 1-16**).

**As per claim 33**, Langels et al. in view of Krivoshein discloses the method wherein:

the receiver measurement transmitter accepts and evaluates signals from more

than one transmitting measurement transmitter (**Langels et al. fig 2:40: wherein the receiver measurement transmitter herein “technology module” evaluates signals from transmitting measurement transmitters herein “technology modules” 41 & 43).**

2. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Langels et al. (US6473656B1)**, in view of **Krivoshein (US6449715B1)** and further in view of **Larson et al. (US6850973B1)**.

As per claim 21, Langels et al. in view of Krivoshein does not disclose the method wherein the transmitting measurement transmitter is placed in the HART® burst mode, for transmitting its measured values in regular intervals.

Larson et al. discloses the method wherein:

the transmitting measurement transmitter is placed in the HART® burst mode, for transmitting its measured values in regular intervals (**Larson et al. fig 1, col 3 ln 11-36).**

Therefore, it would have been obvious to implement the Hart burst mode feature of Larson et al. in the Langels et al. in view of Krivoshein method for transmitting measured values between two measurement transmitters.

The motivation would to provide a communication protocol that is implemented in process control network with a different physical configuration, allows transmission of non-process control information without affecting the network's ability to perform process control (col 3 ln 32-37).



3. Claims 24-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Langels et al. (US6473656B1)**, in view of **Krivoshein (US6449715B1)** and further in view of **Cook et al. (US2004/0049358A1)**.

As per claim 24, Langels et al. in view of Krivoshein does not disclose the method wherein the receiver measurement transmitter, a computer unit is installed with an evaluation program, which determines from the different measured variables a derived measurement variable.

Cook et al. discloses the method wherein:

the receiver measurement transmitter, a computer unit is installed with an evaluation program (**Cook et al. par[0070] In 17-21, par[0034]: wherein the controller being operable to execute the instructions is equivalent to a computer unit**), which determines from the different measured variables a derived measurement variable (**Cook et al. fig 7, par[0033]-par[0034]: wherein the calibrating constant "k" according to the disclosed equation is computed referring to par[0072], and is equivalent to the derived measured variable**).

Therefore, it would have been obvious to implement the method of deriving measurement variables of Cook et al. in the Langels et al. in view of Krivoshein method for transmitting measured values between two measurement transmitters.

The motivation would to provide for determining and using corrected pressure and/or the corrected density can be used in a variety of applications that require density including steam quality determinations and energy content determinations (par[0163]).

**As per claim 25**, Langels et al. in view of Krivoshein does not disclose the method, wherein the receiver measurement transmitter is a vortex measuring device and the transmitting measurement transmitter is a pressure measuring device, which determine, respectively, flow velocity and pressure in a medium.

Cook et al. discloses the method wherein:

the receiver measurement transmitter is a vortex measuring device (**Cook et al. fig 1:140, par[0056]**) and the transmitting measurement transmitter is a pressure measuring device (**Cook et al. fig 1:160, par[0056]**), which determine, respectively, flow velocity and pressure in a medium (**Cook et al. fig 7, par[0033]-par[0034]**).

Therefore, it would have been obvious to implement the method of deriving measurement variables of Cook et al. in the Langels et al. in view of Krivoshein method for transmitting measured values between two measurement transmitters.

The motivation would to provide for determining and using corrected pressure and/or the corrected density can be used in a variety of applications that require density including steam quality determinations and energy content determinations (par[0163]).

**As per claim 25**, Langels et al. in view of Krivoshein and Cook et al. discloses the method wherein:

installed in the vortex measuring device is a flow computing unit (**Cook et al. par[0070] In 17-21, par[0034]: wherein the controller being operable to execute the instructions is equivalent to a computer unit**), which determines, from the pressure value and flow velocity of the medium, a derived, measured variable (**Cook et al. fig 7, par[0033]-par[0034]: wherein the calibrating constant "k" according to the**

***disclosed equation is computed referring to par[0072], and is equivalent to the derived measured variable).***

**As per claim 27**, Langels et al. in view of Krivoshein and Cook et al. discloses the method wherein:

the vortex measuring device contains an additional, installed, temperature sensor ***(Cook et al. fig 6:640, par[0091]).***

**As per claim 28**, Langels et al. in view of Krivoshein and Cook et al. discloses the method wherein:

installed in the vortex measuring device is a flow computing unit ***(Cook et al. par[0070] In 17-21, par[0034]: wherein the controller being operable to execute the instructions is equivalent to a computer unit)***, which determines from the flow velocity of the medium, the temperature value and the pressure, a derived, measured variable (e.g. heat flux value or mass flow value) ***(Cook et al. fig 7, par[0028], par[0102]-[0108]: wherein equations 6-10 are representing the derived measured variables).***

**As per claim 29**, Langels et al. in view of Krivoshein does not disclose the method wherein the receiver measurement transmitter is a vortex measuring device with an installed, additional, temperature sensor, and the transmitting measurement transmitter is a temperature measuring device.

Cook et al. discloses the method wherein:

the receiver measurement transmitter is a vortex measuring device ***(Cook et al. fig 1:140, par[0056])*** with an installed, additional, temperature sensor ***(Cook et al.***

***par[0056]: wherein the temperature sensor not shown in fig 1), and the transmitting measurement transmitter is a temperature measuring device (Cook et al. fig 6:640, par[0091]).***

Therefore, it would have been obvious to implement the method of deriving measurement variables of Cook et al. in the Langels et al. in view of Krivoshein method for transmitting measured values between two measurement transmitters.

The motivation would be to provide for determining and using corrected pressure and/or the corrected density can be used in a variety of applications that require density including steam quality determinations and energy content determinations (par[0163]).

**As per claim 30**, Langels et al. in view of Krivoshein and Cook et al. discloses the method wherein:

in the measuring device, a flow computing unit is installed (***Cook et al. par[0070] In 17-21, par[0034]: wherein the controller being operable to execute the instructions is equivalent to a computer unit***), which determines from the flow velocity of the medium, the temperature value of the temperature sensor of the vortex measuring device and the temperature value of the temperature measuring device, a derived, measured variable (e.g. energy drain) (***Cook et al. fig 7, par[0033]-par[0034], par[0102]-[0108]: wherein equations 6-10 are representing the derived measured variables***).

**As per claim 31**, Langels et al. in view of Krivoshein does not disclose the method wherein the receiver measurement transmitter is a vortex measuring device and

the transmitting measurement transmitter is a temperature measuring device, which determine, respectively, flow velocity and temperature in a medium.

Cook et al. discloses the method wherein the receiver measurement transmitter is a vortex measuring device (**Cook et al. fig 1:140, par[0056]**) and the transmitting measurement transmitter is a temperature measuring device (**Cook et al. fig 6:640, par[0091]**), which determine, respectively, flow velocity and temperature in a medium (**Cook et al. fig 7, par[0028]-par[0030]**).

Therefore, it would have been obvious to implement the method of deriving measurement variables of Cook et al. in the Langels et al. in view of Krivoshein method for transmitting measured values between two measurement transmitters.

The motivation would to provide for determining and using corrected pressure and/or the corrected density can be used in a variety of applications that require density including steam quality determinations and energy content determinations (par[0163]).

**As per claim 32**, Langels et al. in view of Krivoshein and Cook et al. discloses the method wherein:

in the vortex measuring device, a flow computing unit is installed (**Cook et al. par[0070] In 17-21, par[0034]: wherein the controller being operable to execute the instructions is equivalent to a computer unit**), which determines from the flow velocity of the medium and the temperature, a derived, measured variable (e.g. heat flux value or mass flow value, for liquids or saturated steam) (**Cook et al. fig 7, par[0033]-par[0034], par[0102]-[0108]: wherein equations 6-10 are representing the derived measured variables**).

4. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Langels et al. (US6473656B1)**, in view of **Krivoshein (US6449715B1)**, in view of **Cook et al. (US2004/0049358A1)** and further in view of **Van()**.

As per claim 34, Langels et al. in view of Krivoshein and Cook et al. does not disclose the method wherein the receiver measurement transmitter is a Coriolis flow measuring device, an ultrasonic flow measuring device or a magneto-inductively or thermally working, flow measuring device.

Van discloses the method wherein:

the receiver measurement transmitter is a Coriolis flow measuring device, an ultrasonic flow measuring device or a magneto-inductively or thermally working, flow measuring device (**Van fig 1, page 2 In 13-20: wherein the measurement transmitter is a Coriolis flow measuring device**).

Therefore, it would have been obvious to implement the type of receiver measurement transmitter of Van in the Langels et al. in view of Krivoshein and Cook et al. method for transmitting measured values between two measurement transmitters.

The motivation would to provide a method for measuring and/or monitoring flow parameters of a medium, which medium flows through a mass flow measuring instrument (page 1 In 1-2).

### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AMINE BENLAGSIR whose telephone number is (571)270-5165. The examiner can normally be reached on 9am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, BRIAN ZIMMERMAN can be reached on (571)272-3059. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. B./  
Examiner, Art Unit 2612

/Brian A Zimmerman/  
Supervisory Patent Examiner, Art Unit 2612